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is very unimportant. Also the mortality varies by numbers that are very uncommon for this season.

There have still been smallpox cases and deaths, but numerically to a very inconsiderable extent.

In regard to yellow fever there were reported during the last three weeks 9, 17, and 16 deaths per week, against 28, 48, and 50 deaths in the corresponding periods of last year.

Yellow fever at Santos and Sorocaba.

For the last few weeks there have occurred regularly cases of yellow fever at Santos, and therefrom on board of several ships the disease has been spread to Montevideo and Buenos Ayres.

A very considerable yellow-fever epidemic prevails at Sorocaba, as I have already reported. During the last month more than 200 deaths have occurred in the small city. The average number of patients in the hospital amounts to from 120 to 150.

The unattacked inhabitants have abandoned the city.

In order to show the state of affairs there I will mention that, according to a report that has been received, there were on the 19th instant 139 patients in the hospital, and there entered on the same day 28. There were discharged 15 and there died 3. Besides, there died on this day, 11 yellow fever patients in private houses.

Bills of health.

Since my last report the following-named ships have been inspected and received bills of health of this office: February 15, steamship *Asti*, German, for New York. February 18, steamship *Coteridge*, British, for New York. February 21, steamship *Colombia*, French, for Galveston; brigantine *Blenheim*, British, for New York.

Respectfully,

W. HAVELBURG, M. D.,

Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

Annual sanitary report of Rio de Janeiro for 1899.

RIO DE JANEIRO, *February 21, 1900.*

SIR: I have the honor to submit the following report on the health of Rio de Janeiro for the year 1899:

The most important starting point for a statistical consideration is the knowledge of the number of inhabitants of Rio de Janeiro. In my former communication I pointed out the lack of certainty in regard to the figures adopted by the health authorities.

For the year 1898 the authorities stated the number of inhabitants of Rio de Janeiro to be 750,000; for 1899, 768,000.

During the year 1899 there have arrived here by sea 44,514 persons, and departed, 44,732; and arrivals overland, 243,471, and departed, 230,009; total arrived, 287,985, and total departed, 274,741, a difference of 13,224 in favor of the arrivals.

In consequence of this the authorities are led to estimate the population of Rio de Janeiro for the year 1900 at 779,000 inhabitants.

During the year 1899 the total mortality was 15,600; the total number of living births was 14,235. Therefrom results, that the number of births is exceeded by that of the deaths to the number of 1,365.

It is argued, that the population of Rio de Janeiro is increasing, especially by the excess of arrivals over departures.

I have mentioned in one of my reports, that the statement of the minister of the interior in regard to the mortality of Rio de Janeiro during the year 1898, showed about 1,500 deaths more than the publications of the sanitary authorities. It would be possible also to prove, that for the year 1899 there were about 1,500 more deaths than the number reported by the health authorities. This difference may be explained in the following way: The authorities for Rio de Janeiro fail to report the deaths of persons, who were not residents of the city, such for instance as those who came here in order to obtain medical attendance.

Accepting the figures of the authorities, result would be that for the year 1899 the mortality in Rio de Janeiro amounts to 20.3 per 1,000; it was for 1898, 19.6 per 1,000. With such figures Rio de Janeiro may be considered a city whose sanitary state is not inferior to that of other large cities in different climates. For instance, according to official statements, the mortality was for 1898: Boston, 20.09; Marseilles, 26.6; Buenos Ayres, 19.1; London, 18.2; Paris, 19; Liverpool, 24.3; and at Hamburg, 17.2 per 1,000.

The proportion of death rate among children, up to 1 year of age, to the general mortality was for 1899, 186, and for 1898, 190.8 per 1,000.

For purposes of comparison, it may be mentioned that this death rate of children was for the year 1898: Boston, 200.9; Buenos Ayres, 256.4; Paris, 131.8; Marseilles, 169.6; London, 262.7; Liverpool, 290.1, and at Hamburg, 344.2 per 1,000.

But we must not forget that these favorable figures for Rio de Janeiro can not be accepted, unless we also accept the unproved statement of a large population. I can not refrain from expressing some doubts in regard to that result as long as definite figures in regard to the number of inhabitants are not presented.

Yellow fever has made during the year 1899—349 less victims than in the preceding year. It was during the months of February and March that the disease chiefly prevailed. Those months were distinguished in a meteorological respect by the highest average temperature, observed during the whole year, further by a high degree of dampness in the atmosphere, extraordinary intensity of dampness, small quantity of ozone and small rainfall. Yellow fever continued during all the year.

Smallpox has continued without interruption from the year 1898 during the whole of 1899. In the cooler months, beginning with July, there was an increase, especially during the months of September, October and November. From that time there has been a decrease.

The report on malaria and the kindred disease, pernicious fever (*accessio pernicioso*), has been more favorable during the year 1899 than during the foregoing year. The culmination of these diseases has been observed also in the months of February and March.

As to beriberi, which for years seemed to me to be in many cases, thus clinically reported, a form of malarial infection, it has had its culmination point in the summer months from February up to May.

Tuberculosis occupies, as always, the most important part in the causes of death. It represents 17.6 per cent of the total mortality against 16.9 per cent in the preceding year.

The universal efforts made for combating tuberculosis has hitherto met with very little response here. In the scientific and general press this theme is discussed, but up to the present little progress beyond

words has been made. The construction or the suggestion of the construction of a modern sanitary establishment is still in abeyance.

In regard to the most important other diseases a comparison of the percentage of deaths to the total mortality of this and the last year shows that no essential alteration is observed.

In regard to mortality among children the observation must be made that a considerable number of children have died in consequence of trismus whose appearance may be prevented very often by precautions recommended in the present state of the medical sciences and practice. As that disease attacks children only in the first weeks of their existence, and as there were 700 deaths of children of one month or less, it follows that the total number of 131 deaths from trismus neonatorum represents 18.7 per cent of all cases of deaths of those children.

In athrepsy I have included the causes of deaths, which by some physicians have been reported with the designation of "fraqueza congenita," by others with athrepsy. This was the cause of death in 804 instances, and if we consider that by that disease only children up to 1 year old are attacked, that number represents 36.5 per cent of the total mortality of children up to 1 year old.

Respectfully,

W. HAVELBURG, M. D.,

Acting Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,

U. S. Marine-Hospital Service.

Deaths in Rio de Janeiro, Brazil, during the year 1899.

| Months. | Yellow fever. | Smallpox. | Plague. | Measles. | Scarlet fever. | Pernicious fever. | Diphtheria and croup. | Cholera. | Beriberi. | Typhoid fever. | Dysentery. | Malaria. | Tuberculosis. | Septical infection. | Influenza. |
|------------------|---------------|-----------|---------|----------|----------------|-------------------|-----------------------|----------|-----------|----------------|------------|----------|---------------|---------------------|------------|
| January | 99 | 23 | ..... | 7 | ..... | 86 | 2 | ..... | 15 | 7 | 4 | 68 | 260 | 10 | 3 |
| February | 170 | 10 | ..... | 2 | ..... | 105 | 1 | ..... | 20 | 16 | 4 | 85 | 199 | 4 | 3 |
| March | 204 | 23 | ..... | 4 | ..... | 177 | ..... | ..... | 26 | 15 | 7 | 132 | 233 | 3 | 7 |
| April | 91 | 30 | ..... | 1 | ..... | 53 | 2 | ..... | 23 | 13 | 6 | 65 | 226 | 5 | 4 |
| May | 48 | 42 | ..... | ..... | ..... | 50 | ..... | ..... | 20 | 11 | 7 | 47 | 216 | 5 | 2 |
| June | 25 | 78 | ..... | 4 | ..... | 34 | 2 | ..... | 14 | 9 | 7 | 27 | 198 | 1 | 1 |
| July | 11 | 114 | ..... | ..... | 1 | 23 | 5 | ..... | 9 | 24 | 10 | 30 | 192 | 8 | 5 |
| August | 10 | 168 | ..... | 4 | ..... | 32 | 3 | ..... | 2 | 32 | 9 | 22 | 204 | 5 | ..... |
| September | 11 | 270 | ..... | 9 | ..... | 33 | 1 | ..... | 3 | 33 | 5 | 34 | 213 | 5 | 3 |
| October | 14 | 254 | ..... | 7 | ..... | 37 | 3 | ..... | 6 | 7 | 3 | 35 | 244 | 10 | 2 |
| November | 14 | 234 | ..... | 5 | ..... | 41 | 1 | ..... | 3 | 17 | 3 | 31 | 225 | 7 | 3 |
| December | 34 | 154 | ..... | 10 | ..... | 52 | 1 | ..... | 3 | 5 | 3 | 37 | 235 | 4 | 3 |
| Total 1899 | 731 | 1,395 | ..... | 62 | 1 | 723 | 21 | ..... | 149 | 189 | 68 | 613 | 2,645 | 72 | 36 |
| Total 1898 | 1,078 | 65 | ..... | 10 | ..... | 786 | 7 | ..... | 272 | 95 | 118 | 821 | 2,593 | 105 | ..... |
| Increase ..... | ..... | 1,330 | ..... | 52 | 1 | ..... | 14 | ..... | ..... | 94 | ..... | ..... | 152 | ..... | ..... |
| Decrease | 347 | ..... | ..... | ..... | ..... | 63 | ..... | ..... | 123 | ..... | 50 | 208 | ..... | 33 | ..... |

| Months. | Cancer. | Alcoholism. | Meningitis. | Apoplexy and softening of brain. | Trismus neonatorum. | Heart diseases. | Disease of the arteries. | Broncho-pneumonia. | Pneumonia. | Athrepsy. | Bright's disease. | Suicide. | From all causes. |
|------------------|---------|-------------|-------------|----------------------------------|---------------------|-----------------|--------------------------|--------------------|------------|-----------|-------------------|----------|------------------|
| January | 17 | 2 | 56 | 25 | 11 | 100 | 67 | 83 | 14 | 67 | 14 | 3 | 1,356 |
| February | 16 | 3 | 48 | 27 | 15 | 75 | 46 | 90 | 17 | 63 | 21 | 4 | 1,361 |
| March | 11 | 1 | 68 | 33 | 13 | 120 | 69 | 132 | 18 | 84 | 16 | 4 | 1,777 |
| April | 15 | 4 | 39 | 38 | 14 | 94 | 69 | 97 | 20 | 57 | 16 | 5 | 1,299 |
| May | 13 | 2 | 29 | 31 | 10 | 86 | 71 | 90 | 19 | 77 | 25 | 5 | 1,237 |
| June | 16 | 2 | 34 | 28 | 10 | 88 | 63 | 80 | 26 | 57 | 18 | 4 | 1,155 |
| July | 13 | 4 | 46 | 25 | 8 | 88 | 45 | 85 | 19 | 80 | 18 | 4 | 1,156 |
| August | 12 | 4 | 41 | 31 | 10 | 74 | 65 | 93 | 23 | 82 | 14 | 2 | 1,254 |
| September | 15 | 3 | 43 | 29 | 5 | 63 | 43 | 91 | 18 | 73 | 13 | 2 | 1,269 |
| October | 16 | 1 | 41 | 27 | 11 | 71 | 60 | 82 | 18 | 55 | 20 | 5 | 1,251 |
| November | 15 | 2 | 48 | 26 | 10 | 65 | 50 | 88 | 21 | 51 | 13 | 2 | 1,204 |
| December | 20 | ..... | 70 | 29 | 14 | 82 | 57 | 88 | 28 | 58 | 13 | 4 | 1,281 |
| Total 1899 | 179 | 28 | 563 | 349 | 131 | 1,006 | 705 | 1,099 | 241 | 804 | 201 | 44 | 15,600 |
| Total 1898 | 189 | 27 | 448 | 318 | 156 | 1,176 | 530 | 946 | 243 | 1,476 | 264 | 67 | 15,835 |
| Increase ..... | ..... | 1 | 115 | 31 | ..... | ..... | 175 | 153 | ..... | ..... | ..... | ..... | ..... |
| Decrease | 10 | ..... | ..... | ..... | 25 | 170 | ..... | ..... | 2 | 672 | 63 | 23 | 235 |

Deaths according to nationality.

| Months. | Brazilians. | Portuguese. | Italians. | Spaniards. | Germans. | British. | French. | Other Europeans. | English-speaking Americans. | Spanish-Americans. | Turkish-Arabs. | Other Asiatics. | Africans. | Nationality unknown. |
|----------------|-------------|-------------|-----------|------------|----------|----------|---------|------------------|-----------------------------|--------------------|----------------|-----------------|-----------|----------------------|
| January..... | 940 | 254 | 59 | 39 | 3 | 2 | 7 | 7 | 1 | 3 | ..... | ..... | 17 | 24 |
| February..... | 873 | 275 | 92 | 41 | 12 | 1 | 17 | 17 | 1 | 5 | 5 | 1 | 16 | 16 |
| March..... | 1,130 | 381 | 105 | 67 | 3 | 3 | 15 | 17 | 2 | 1 | 5 | ..... | 13 | 6 |
| April..... | 905 | 234 | 54 | 56 | 4 | 2 | 8 | 12 | 1 | 1 | 5 | ..... | 17 | 4 |
| May..... | 871 | 232 | 36 | 29 | 1 | 1 | 8 | 12 | ..... | 5 | ..... | ..... | 25 | 13 |
| June..... | 868 | 188 | 16 | 30 | 5 | 3 | 12 | 4 | 1 | 1 | 1 | ..... | 15 | 11 |
| July..... | 891 | 175 | 16 | 24 | 7 | 7 | 1 | 3 | 1 | ..... | ..... | 1 | 17 | 8 |
| August..... | 973 | 183 | 23 | 28 | 3 | 3 | 5 | 5 | 1 | 2 | 4 | ..... | 25 | 4 |
| September..... | 1,007 | 224 | 33 | 25 | 3 | 3 | 8 | 5 | ..... | ..... | 3 | 1 | 10 | ..... |
| October..... | 996 | 152 | 27 | 31 | 5 | 6 | 10 | 5 | ..... | ..... | ..... | ..... | 15 | 4 |
| November..... | 963 | 162 | 26 | 24 | 5 | 1 | 4 | 2 | ..... | ..... | 1 | 3 | 11 | 2 |
| December..... | 982 | 184 | 33 | 28 | 1 | 1 | 14 | 3 | ..... | 1 | 6 | 4 | 21 | 3 |
| Total..... | 11,399 | 2,648 | 521 | 423 | 63 | 32 | 109 | 70 | 8 | 18 | 39 | 15 | 202 | 95 |
| 1898..... | 11,066 | 2,743 | 643 | 600 | 64 | 43 | 114 | 81 | 16 | 53 | 30 | 5 | 244 | 138 |
| Increase..... | 333 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 9 | 10 | ..... | ..... |
| Decrease..... | ..... | 95 | 122 | 177 | 1 | 11 | 5 | 11 | 8 | 35 | ..... | ..... | 42 | 43 |

Births in Rio de Janeiro during 1899.

| Months. | Legitimate. | | | Illegitimate. | | | Total births. |
|---------------------|-------------|----------|--------|---------------|----------|--------|---------------|
| | Males. | Females. | Total. | Males. | Females. | Total. | |
| First quarter..... | 1,356 | 1,319 | 2,675 | 499 | 422 | 921 | 2,596 |
| Second quarter..... | 1,495 | 1,406 | 2,901 | 468 | 469 | 937 | 3,838 |
| Third quarter..... | 1,406 | 1,392 | 2,798 | 466 | 471 | 937 | 3,735 |
| Fourth quarter..... | 1,149 | 1,170 | 2,319 | 384 | 363 | 747 | 3,066 |
| Total..... | 5,406 | 5,287 | 10,693 | 1,817 | 1,725 | 3,542 | 14,235 |

| Months. | Race. | | | | | | | Still-births. |
|---------------------|--------|----------|--------|----------|----------|----------|------------------|---------------|
| | White. | | Mixed. | | Colored. | | Total re-ported. | |
| | Males. | Females. | Males. | Females. | Males. | Females. | | |
| First quarter..... | 1,389 | 1,336 | 273 | 233 | 57 | 55 | 3,343 | 307 |
| Second quarter..... | 1,645 | 1,529 | 218 | 246 | 59 | 55 | 3,752 | 304 |
| Third quarter..... | 1,580 | 1,585 | 252 | 223 | 40 | 55 | 3,735 | 284 |
| Fourth quarter..... | 1,281 | 1,283 | 213 | 203 | 39 | 47 | 3,066 | 260 |
| Total..... | 5,895 | 5,733 | 956 | 905 | 195 | 212 | 13,896 | 1,135 |

Total living births, 1899..... 14,235
 Total stillbirths, 1899..... 1,135

Total..... 15,370

Total living births, 1898..... 13,992
 Total stillbirths, 1898..... 1,088

Total..... 15,080

Population officially estimated, 768,000 inhabitants; rate per 1,000 of birth, 18.5; legitimate birth, 13.9; illegitimate birth, 4.6; proportion of illegitimate to legitimate births, 1.3 or 33.3 per cent.

Deaths of children.

| Months. | Between— | | Months. | Between— | |
|---------------|------------------------|-------------------------|----------------|------------------------|-------------------------|
| | 0 day and 1 month old. | 1 month and 1 year old. | | 0 day and 1 month old. | 1 month and 1 year old. |
| January..... | 57 | 200 | August..... | 56 | 217 |
| February..... | 54 | 206 | September..... | 63 | 164 |
| March..... | 91 | 167 | October..... | 50 | 147 |
| April..... | 67 | 179 | November..... | 42 | 141 |
| May..... | 57 | 212 | December..... | 48 | 189 |
| June..... | 57 | 194 | | | |
| July..... | 58 | 183 | Total..... | | 2,899 |

| | |
|--|-------------------|
| Ratio of the mortality of children to the general mortality..... | Per cent. 18.6 |
| Mortality of children up to 1 month old from trismus..... | 18.7 |
| Mortality of children up to 1 year old from athrepsy..... | 36.5 |
| Death rate of children under 1 year..... | 18.6 |

Meteorological observations.

AVERAGE.

| Month. | Prevailing winds. | Atmospheric pressure. | Temperature. | Pressure of dampness. | Comparative dampness. | Fogginess. | Evaporation. | Ozone. | Rainfall. |
|----------------|-------------------|-----------------------|--------------|-----------------------|-----------------------|------------|--------------|--------|-----------|
| January..... | SW. | 753.49 | 25.16 | 18.9 | 80.4 | .7 | 72.7 | 91 | 166.2 |
| February..... | SW. | 755.52 | 26. | 19.3 | 77. | .5 | 80. | 88 | 25.4 |
| March..... | SW. | 755.23 | 26.57 | 18.5 | 73.5 | .4 | 96.4 | 84 | 43.7 |
| April..... | SW. | 756.64 | 25.10 | 18.2 | 79.7 | .5 | 66.1 | 123 | 212.1 |
| May..... | SW. | 758.88 | 22.43 | 16.1 | 79.8 | .4 | 60.3 | 93 | 52.5 |
| June..... | N. | 759.02 | 19.70 | 13.9 | 81.7 | .6 | 33.3 | 111 | 108.5 |
| July..... | SW. | 759.61 | 20.42 | 14.2 | 74.7 | .4 | 69. | 153 | 17.4 |
| August..... | SW. | 757.54 | 21.49 | 14.2 | 75.2 | .6 | 73.3 | 166 | 32.1 |
| September..... | SW. | 759.35 | 20.84 | 14.7 | 81.4 | .9 | 56.9 | 189 | 107.3 |
| October..... | SW. | 757.06 | 21.31 | 16. | 82.9 | .7 | 51.8 | 144 | 102.32 |
| November..... | SW. | 754.73 | 23.19 | 16.9 | 81.2 | .8 | 65.2 | 146 | 87.47 |
| December..... | SW. | 754.51 | 23.66 | 17.6 | 81.9 | .8 | 59.3 | 130 | 127.73 |

Ships inspected in the harbor of Rio de Janeiro by the medical authorities during the year 1899 : 1,591 steamers and 291 sailing vessels ; total, 1,882 ships. Movement at the quarantine station of Ilha Grande : Semester I, 23 steamers and 4 sailing vessels ; total, 27 ships. Semester II, 104 steamers and 8 sailing vessels ; total, 112 ships. Total, 127 steamers and 12 sailing vessels ; total, 139 ships.

| | |
|---|-------|
| Mortality for the year 1899 for 1,000, by a population calculated 768,000 inhabitants | 20.3 |
| Mortality for the year 1898, by a population calculated 750,000 inhabitants..... | 19.6 |
| Mortality from yellow fever during 1899 for 1,000 inhabitants..... | 0.9 |
| Malarial fever..... | 1.5 |
| Tuberculosis | 3.4 |
| Pernicious fever | 0.94 |
| | 1899. |
| Percentage of deaths from tuberculosis to the total mortality..... | 16.9 |
| Malaria, including pernicious fever..... | 8.5 |
| Yellow fever..... | 4.7 |
| Beriberi | 0.95 |
| Cancer | 1.16 |
| Apoplexy and softening of brain..... | 2.2 |
| Heart and arterial diseases..... | 10.9 |
| Pneumonia..... | 1.5 |
| Bright's disease..... | 1.3 |
| | 1898. |
| | 17.6 |
| | 10.9 |
| | 7.3 |
| | 1.8 |
| | 1.3 |
| | 2.2 |
| | 11.6 |
| | 1.65 |
| | 1.8 |